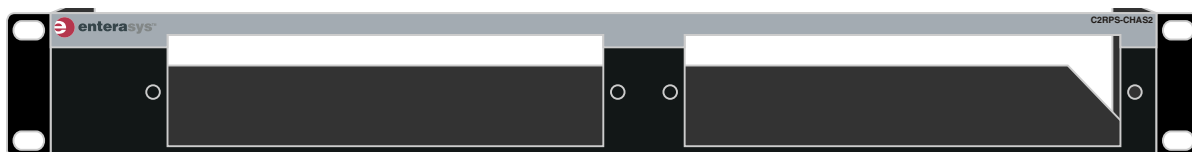


SecureStack C2

Redundant Power Supply Chassis

C2RPS-CHAS2

Installation Guide



Caution: Do not use this product with SecureStack PoE devices. Any SecureStack device with a “P” suffix in the model number (C2xxxx-xxP) indicates a SecureStack PoE-compliant device and is not compatible with this power system

Precaución: El RPS no es compatible con switches SecureStack C2 con PoE. No intente conectar el cable de corriente del RPS a ningún switch SecureStack C2 que tenga el sufijo “P” en el nombre del modelo, tal como C2xxxx-xxP. De lo contrario, el dispositivo puede dañarse.



Electrical Hazard: Only qualified personnel should perform installation procedures.

Advertencia eléctrica: Solamente personal calificado debe realizar procedimientos de instalacion.

Elektrischer Gefahrenhinweis: Installationen sollten nur durch ausgebildetes und qualifiziertes Personal vorgenommen werden.

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Este producto de Enterasys cumple con lo siguiente: 47 CFR Partes 2 y 15, CSA C108.8, 89/336/EEC, EN 55022, EN 55024, EN 61000-3-2, EN 61000-3-3, AS/NZS CISPR 22, VCCI V-3.

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Manufacturer's Address: **50 Minuteman Road**
Andover, MA 01810
USA

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Conformance to Directive(s)/Product Standards: **EC Directive 89/336/EEC**
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EN 61000-3-2
EN 61000-3-3
EN 55024
EC Directive 73/23/EEC
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Contents

About This Guide

Who Should Use This Guide	xi
How to Use This Guide	xi
Related Documents	xii
Conventions Used in This Guide	xiii

Chapter 1: Introduction

RPS Overview	1-1
C2RPS-CHAS2 Chassis	1-2
C2RPS-PSM Power Supply Module	1-3
RPS Deployment Strategies	1-4

Chapter 2: Installation

Required Tools	2-1
Unpacking Chassis and Power Supply Module(s)	2-1
Installing C2RPS-PSMs	2-2
Replacing an Installed C2RPS-PSM	2-3
Installing C2RPS-CHAS2 into the Rack	2-4
Guidelines for Rackmount Installation	2-4
Rack Mounting the Chassis	2-5
Connecting the PSM Cables and AC Power Cords	2-6

Appendix A: Specifications

C2RPS-CHAS2 Chassis Specifications	A-1
C2RPS-PSM Specifications	A-2
C2RPS-PSM Redundant Power Supply Output Connector	A-2
Compliance Standards	A-3

Figures

1-1	SecureStack C2RPS-CHAS2 (front view without PSM).....	1-2
1-2	SecureStack C2RPS-CHAS2 (front view with two PSMs).....	1-2
1-3	SecureStack C2RPS-CHAS2 (rear view with two PSMs).....	1-2
1-4	C2RPS-PSM (front view)	1-3
1-5	C2RPS-PSM (rear view).....	1-3
1-6	RPS Supporting Two SecureStack Switches.....	1-4
2-1	C2RPS-PSM Installation	2-3
2-2	Fastening the C2RPS-CHAS2 to the Rack.....	2-5
2-3	C2RPS-PSM Cable.....	2-6
2-4	Power Connectors on C2RPS-PSM (rear view).....	2-6
2-5	C2RPS-PSM Cable and AC Power Cord Connections.....	2-7
A-1	C2RPS-PSM Redundant Power Supply Connector Pin Locations	A-2

Tables

2-1	Contents of C2RPS-CHAS2 Carton.....	2-2
2-2	Contents of C2RPS-PSM Carton	2-2
A-1	C2RPS-CHAS2 Specifications.....	A-1
A-2	C2RPS-PSM Specifications	A-2
A-3	C2RPS-PSM Redundant Power Supply Connector Pin Functions.....	A-3
A-4	Compliance Standards.....	A-3

About This Guide

This guide provides an overview, installation and troubleshooting instructions, and specifications for the Enterasys Networks™ SecureStack C2 redundant power supply chassis (C2RPS-CHAS2), power supply module (C2RPS-PSM), DC power cables (C2RPS-PSM Cable), and AC power cords.



Note: In this document, the following terms are used:

- *RPS* refers to a complete redundant power system, which includes a C2RPS-CHAS2 chassis and optional power supply modules.
- *Chassis* refers to the C2RPS-CHAS2 chassis.
- *PSM* refers to the C2RPS-PSM power supply module.
- *PSM cable* refers to the C2RPS-PSM Cable (12 Vdc power cable).

Who Should Use This Guide

This guide is intended for a network administrator responsible for installing and setting up the stackable switch.



Electrical Hazard: Only qualified personnel should perform installation procedures.

Riesgo Electrico: Solamente personal calificado debe realizar procedimientos de instalacion.

Elektrischer Gefahrenhinweis: Installationen sollten nur durch ausgebildetes und qualifiziertes Personal vorgenommen werden.

How to Use This Guide

Read through this guide completely to familiarize yourself with its contents and gain an understanding of the features and capabilities of the RPS components. A general working knowledge of data communications networks is helpful when setting up an RPS (C2RPS-CHAS2 chassis with optional power supply modules).

This preface provides an overview of this guide and the SecureStack C2 manual set, and a brief summary of each chapter, and the conventions used throughout this guide. To locate information in this guide, refer to the following table:

For...	Refer to...
The features and capabilities of the C2RPS-CHAS2 chassis and optional power supply modules. This chapter also provides the instructions for obtaining help from Enterasys Networks, if needed.	Chapter 1, Introduction
Instructions to install an RPS into a standard 19-inch rack. This involves installing the C2RPS-CHAS2 chassis, one or two PSMs, PSM interconnecting cables, and AC power cords.	Chapter 2, Installation
Specifications for the C2RPS-CHAS2 chassis, PSM, PSM cable, Redundant Power Supply connector pinout descriptions, and Compliance Standards.	Appendix A, Specifications

Related Documents

Other manuals have been developed for the SecureStack C2 non-PoE switch devices that can be connected to the RPS for power redundancy.



Caution: The RPS does not support PoE-compliant C2 switches. Do not try to connect the power cable from this RPS to any C2 switch with a “P” suffix in the model name, such as C2xxxx-xxP. Otherwise, damage to the device may result.

Precaución: El RPS no es compatible con switches SecureStack C2 con PoE. No intente conectar el cable de corriente del RPS a ningún switch SecureStack C2 que tenga el sufijo “P” en el nombre del modelo, tal como C2xxxx-xxP. De lo contrario, el dispositivo puede dañarse.

The SecureStack C2 switch manuals explain how to install the switch device, connect network cable segments to the SecureStack C2 switch device, and configure the switch device using the command line interface commands described in the *SecureStack C2 Configuraton Guide*.



Note: Connection of the RPS system does not require reconfiguration of the connected Ethernet Switch.

Each manual is written for qualified personnel responsible for installing the switch device and also have a general working knowledge of data communications networks and their physical layer components.

Conventions Used in This Guide

The following conventions are used in this guide:



Note: Calls the reader's attention to any item of information that may be of special importance.



Caution: Contains information essential to avoid damage to the equipment.

Precaución: Contiene información esencial para prevenir dañar el equipo.

Achtung: Verweist auf wichtige Informationen zum Schutz gegen Beschädigungen.



Electrical Hazard: Warns against an action that could result in personal injury or death due to an electrical hazard.

Riesgo Electrico: Advierte contra una acción que pudiera resultar en lesión corporal o la muerte debido a un riesgo eléctrico.

Elektrischer Gefahrenhinweis: Warnung vor sämtlichen Handlungen, die zu Verletzung von Personen oder Todesfällen – hervorgerufen durch elektrische Spannung – führen können!



Warning: Warns against an action that could result in personal injury or death.

Advertencia: Advierte contra una acción que pudiera resultar en lesión corporal o la muerte.

Warnhinweis: Warnung vor Handlungen, die zu Verletzung von Personen oder gar Todesfällen führen können!

Introduction

This chapter provides a functional overview of a Redundant Power System (RPS).

For information about...	Refer to page...
RPS Overview	1-1
C2RPS-CHAS2 Chassis	1-2
C2RPS-PSM Power Supply Module	1-3
RPS Deployment Strategies	1-4
Getting Help	1-5

RPS Overview

An RPS (redundant power system) consisting of a C2RPS-CHAS2 chassis and C2RPS-PSM power supplies is a simple and economical solution to provide backup power for one or two SecureStack C2 Ethernet switch devices (one for each switch device). When a C2RPS-PSM is connected to a switch device, it continuously monitors the internal power supply of the switch device. If a power interruption is detected, the C2RPS-PSM is automatically triggered to provide power for the switch device, preventing an interruption in network traffic. The end result is a more reliable network infrastructure, protecting the network from a single source of failure from a network device power supply.

Depending on your system requirements, the C2RPS-CHAS2 chassis can consist of the following components to provide redundant power for one or two switch devices:

- One C2RPS-CHAS2 chassis
- One or two C2RPS-PSMs (one per SecureStack switch device)
- One or two AC power cords (one per C2RPS-PSM)
- One or two C2RPS-PSM Cables (one per C2RPS-PSM)



Note: The chassis is shipped without a PSM. The PSMs are ordered separately. Each PSM is shipped with an interconnecting C2RPS-PSM Cable and an AC power cord.

C2RPS-CHAS2 Chassis

The chassis is a two-slot frame without AC power connections or electronics. The chassis can be installed in a standard 19-inch rack and populated with one or two PSMs. Each PSM operates independently. [Figure 1-1](#) shows the front view of the chassis without PSMs. [Figure 1-2](#) and [Figure 1-3](#) show the front and rear views of a fully populated chassis.

Figure 1-1 SecureStack C2RPS-CHAS2 (front view without PSM)

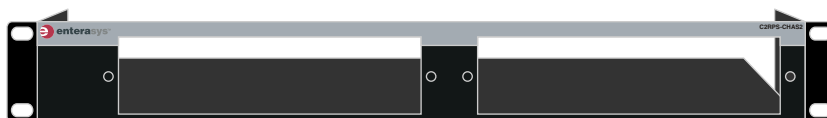


Figure 1-2 SecureStack C2RPS-CHAS2 (front view with two PSMs)

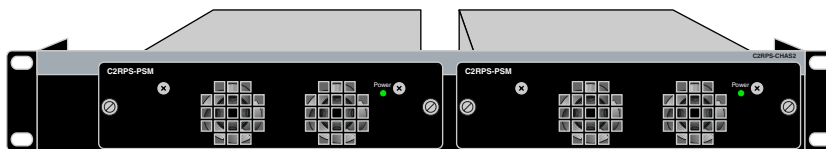
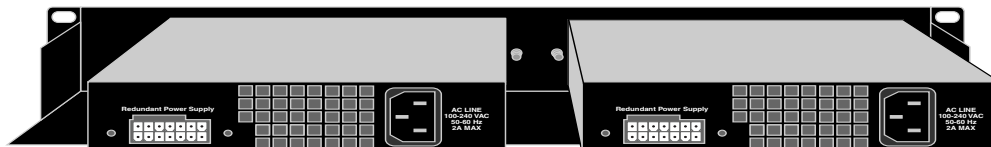


Figure 1-3 SecureStack C2RPS-CHAS2 (rear view with two PSMs)



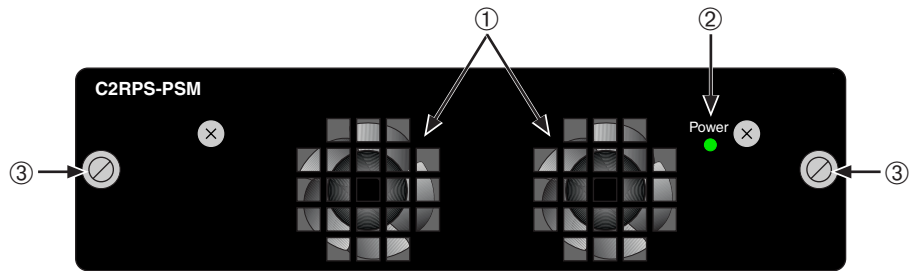
C2RPS-PSM Power Supply Module

The C2RPS-PSM provides the following:

- Hot swap capability.
- One 12 Vdc, 150 Watts of maximum-continuous power output to a connected SecureStack C2 switch device.
- Front panel Status LED that indicates if the PSM is operating correctly.

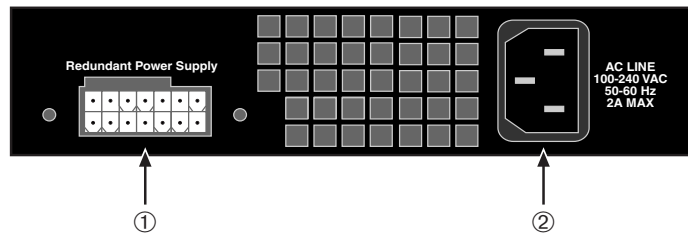
Figures 1-4 and 1-5 show the front and rear view of the C2RPS-PSM.

Figure 1-4 C2RPS-PSM (front view)



- | | |
|--|-----------------------------|
| <p>1 Intake cooling fans</p> <p>2 AC power LED</p> | <p>3 Captive screws (2)</p> |
|--|-----------------------------|

Figure 1-5 C2RPS-PSM (rear view)



- | | |
|--|-----------------------------|
| <p>1 Redundant Power Supply connector
(12 Vdc inputs and PSM status outputs)</p> | <p>2 AC input connector</p> |
|--|-----------------------------|

RPS Deployment Strategies

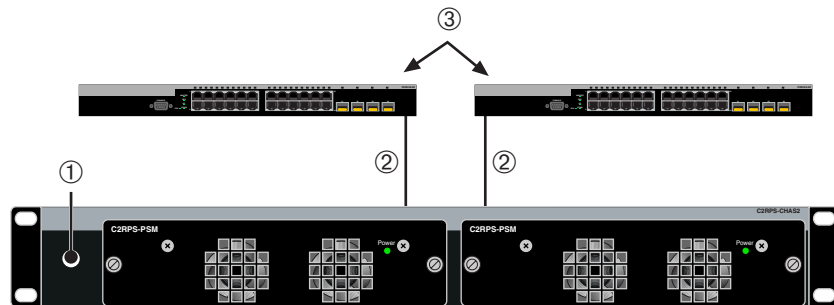
The RPS can be deployed in a variety of situations with mission-critical applications. For example:

- For use in a voice and data network where switches are connected to IP phones and PCs. Connecting an RPS to the switches can prevent voice network failures caused by switch power failures.
- For use in traditional data 10/100/1000 Ethernet switches carrying mission-critical data.

Figure 1-6 shows an example of the RPS providing redundant power backup for two SecureStack C2 switches. If a SecureStack C2 switch device experiences an internal power-supply failure, the following occurs:

1. The internal DC-power source of the switch device is immediately switched over from the internal DC-power supply to the RPS DC-power input.
2. The switch device saves this status information for future retrieval, if necessary.

Figure 1-6 RPS Supporting Two SecureStack Switches



- 1 C2RPS-CHAS2 chassis (front view with two PSMs) 3 SecureStack C2 Ethernet switches
 2 C2RPS-PSM Cables for 12 Vdc and status information from PSMs



Note: The C2RPS-PSMs used in C2RPS-CHAS2 are interchangeable with those used in the C2RPS-CHAS8 chassis available from Enterasys Networks.

Getting Help

For additional support related to the C2RPS-CHAS2 or this document, contact Enterasys Networks using one of the following methods:

World Wide Web	http://www.enterasys.com/support
Phone	603-332-9400 1-800-872-8440 (toll-free in U.S. and Canada) For the Enterasys Networks Support toll-free number in your country: http://www.enterasys.com/support/gtac-all.html
Internet mail	support@enterasys.com To expedite your message, please type [C-SERIES] in the subject line.

To send comments or suggestions concerning this document to the Technical Publications Department:

techpubs@enterasys.com

To expedite your message, please include the document Part Number in the email message.

Before contacting Enterasys Networks for technical support, have the following information ready:

- Your Enterasys Networks service contract number
- A description of the failure
- A description of any action(s) already taken to resolve the problem (e.g., changing mode switches, rebooting the unit, etc.)
- The serial and revision numbers of all involved Enterasys Networks products in the network
- A description of your network environment (layout, cable type, etc.)
- Network load and frame size at the time of trouble (if known)
- The device history (i.e., have you returned the device before, is this a recurring problem, etc.)
- Any previous Return Material Authorization (RMA) numbers

Installation



Electrical Hazard: Only qualified personnel should perform installation procedures.

Riesgo Electrico: Solamente personal calificado debe realizar procedimientos de instalacion.

Elektrischer Gefahrenhinweis: Installationen sollten nur durch ausgebildetes und qualifiziertes Personal vorgenommen werden.

This chapter provides instructions to install all the components of an RPS.

To correctly install an RPS, follow the order of information listed below.

For information about...	Refer to page...
Required Tools	2-1
Unpacking Chassis and Power Supply Module(s)	2-1
Installing C2RPS-PSMs	2-2
Installing C2RPS-CHAS2 into the Rack	2-4
Connecting the PSM Cables and AC Power Cords	2-6

Required Tools

A flat-blade screwdriver is required to install the C2RPS-CHAS2 and C2RPS-PSMs.

Unpacking Chassis and Power Supply Module(s)

The C2RPS-CHAS2 and each C2RPS-PSM are shipped separately. To unpack these devices proceed as follows:

1. Open the box and remove the packing material protecting the devices.
2. Verify the contents of each carton and compare the contents shipped with those listed in [Table 2-1](#) and [Table 2-2](#).

3. Perform a visual inspection of the switch devices for any signs of physical damage. Contact Enterasys Networks if there are any signs of damage. Refer to [“Getting Help”](#) on page 1-5 for details.

Table 2-1 Contents of C2RPS-CHAS2 Carton

Item	Quantity
C2RPS-CHAS2	1
This guide, SecureStack C2 Installation Guide (9034091-xx)	1
Release Notes	1

Table 2-2 Contents of C2RPS-PSM Carton

Item	Quantity
C2RPS-PSM 150 Watt DC Power Supply Module	1
USA, NEMA Power Cord	1
C2RPS-PSM Cable	1
Notice Card	1

Installing C2RPS-PSMs



Caution: Observe all Electrostatic Discharge (ESD) precautions when handling sensitive electronic equipment.

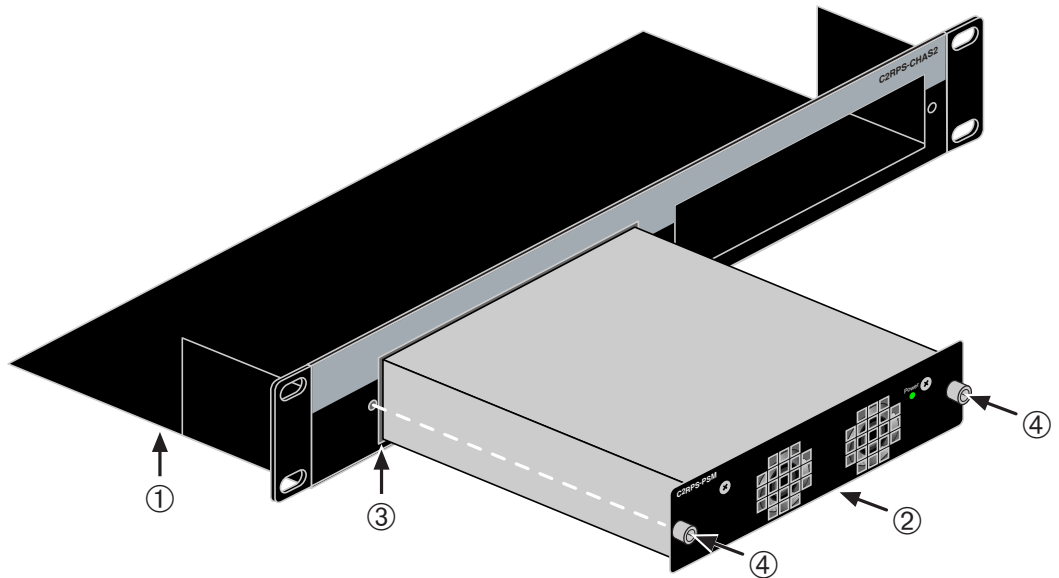
Precaución: Al trabajar con equipos electrónicos sensibles, tome todas las precauciones de seguridad para evitar descargas de electricidad estática.

When you receive your C2RPS-CHAS2 chassis, a coverplate will be in place over each power-supply slot.

To install the PSMs, refer to [Figure 2-1](#) and proceed as follows:

1. Place the chassis on a sturdy flat surface where you plan to install PSMs.
2. Align the PSM with one of the slots, then slide the PSM forward until its front panel is flush against the chassis front panel.
3. Fasten the PSM to the chassis using the captive screws on the PSM front panel.
4. Repeat steps 2 and 3 for each additional PSM.
5. Proceed to [“Installing C2RPS-CHAS2 into the Rack”](#) on page 2-4 for the rack mount installation instructions.

Figure 2-1 C2RPS-PSM Installation



- | | |
|---------------------------------|-----------------------------|
| 1 C2RPS-CHAS2 chassis | 3 Chassis power supply slot |
| 2 C2RPS-PSM power supply module | 4 Captive screws (2) |

Replacing an Installed C2RPS-PSM

To replace a PSM installed in an operating system, proceed as follows:



Caution: Observe all Electrostatic Discharge (ESD) precautions when handling sensitive electronic equipment.

Precaución: Al trabajar con equipos electrónicos sensibles, tome todas las precauciones de seguridad para evitar descargas de electricidad estática.

1. Unplug the AC power cord of the PSM from the AC power source first, then from the rear of the PSM.
2. Loosen the captive screws securing the PSM until it is released from the chassis front panel.
3. Pull the PSM out and remove it from the chassis.
4. Repeat steps 1 through 3 for each additional PSM you plan to remove.



Note: If you plan to remove and not replace a C2RPS-PSM, immediately reinstall coverplates over any empty power supply slots to prevent EMI leakage from the chassis.

To install a PSM, proceed as follows:

1. Align the PSM with the slot, then slide the PSM forward until its front panel is flush against the chassis front panel.
2. Fasten the PSM to the chassis using the captive screws.
3. Perform steps 1 and 2 for each PSM being replaced. When completed, proceed to [“Connecting the PSM Cables and AC Power Cords”](#) on page 2-6.

Installing C2RPS-CHAS2 into the Rack

To install the chassis into a 19-inch (48.3-cm) rack, you need four user-supplied screws to fasten the chassis to the rack rails.

After installing the PSM(s) as described back in [“Installing C2RPS-PSMs”](#) on page 2-2, rack mount the chassis as follows:

1. Refer to the installation guidelines ([“Guidelines for Rackmount Installation”](#) on page 2-4).
2. Install the chassis into the rack ([“Rack Mounting the Chassis”](#) on page 2-5).
3. Connect the PSM cables and AC power cords ([“Connecting the PSM Cables and AC Power Cords”](#) on page 2-6).

Guidelines for Rackmount Installation

The installation site must be within reach of the network cabling and meet the requirements listed below:

- Chassis placement close enough to connect the 2-meter (6.6-foot) AC power cords from the PSMs to the AC power source.
- Up to two three-pronged power receptacles capable of delivering the current and voltage specified in [“C2RPS-PSM Specifications”](#) on page A-2. Up to two AC outlets on independently-fused circuits must be within 182 centimeters (6 feet) from the installation site. If there is an AC power source failure, this will prevent the powering down of PSMs due to a single source power failure.
- Power cords and type of outlet are dependent on the country. In the United States, one power cord with an NEMA 5-15P plug is provided with each C2RPS-PSM.
- An ambient temperature of between 5°C (41°F) and 40°C (104°F) must be maintained at the installation site with fluctuations of less than 10°C (18°F) per hour.



Caution: To ensure proper ventilation and prevent overheating, leave a minimum clearance space of 10.16 cm (4.0 in.) at the front and rear of the N-POE Chassis.

Precaución: Para asegurar una buena ventilación y evitar que el sistema se sobrecaliente, deje un espacio mínimo de 10.16 cm (4 pulgadas.) con respecto a la parte delantera y trasera del chasis N- POE.



Warning: Before installing the chassis into a rack, ensure that the rack can support the device(s) without compromising the stability of the rack. Otherwise, personal injury and/or equipment damage may result.

Advertencia: Antes de instalar el chasis en un rack, asegurarse que el rack puede soportar el(los) dispositivo(s) sin comprometer la estabilidad del mismo. De otra forma puede suceder algún tipo de daño personal o del equipo.

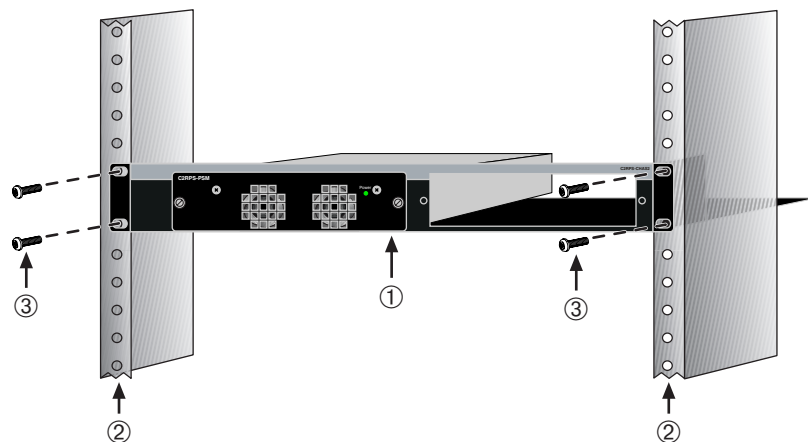
Warnhinweis: Schützen Sie sich vor Verletzungen und Geräteschaden, überzeugen Sie sich vor der Installation des Chassis in das Rack, von dessen Stabilität.

Rack Mounting the Chassis

Refer to [Figure 2-2](#) and proceed as follows to install the chassis into a 19-inch (48.3-cm) rack:

1. Position the chassis between the vertical frame members and align the mounting holes in the chassis brackets with those in the rack frame.
2. Fasten the chassis securely to the frame using four mounting screws (user-supplied).

Figure 2-2 Fastening the C2RPS-CHAS2 to the Rack



- 1 C2RPS-CHAS2 chassis with one PSM 3 Mounting screws (supplied by user)
 2 Rails of 19-inch rack

Connecting the PSM Cables and AC Power Cords

The PSMs are connected to the SecureStack C2 Ethernet switch devices using C2RPS-PSM Cables.

To connect the PSMs, proceed as follows:

1. Connect one end of the C2RPS-PSM Cable (shown in [Figure 2-3](#)) to the Redundant Power Supply connector on the switch device. Then connect the other end to the Redundant Power Supply connector at the rear of the PSM as shown in [Figure 2-4](#) and [Figure 2-5](#).
2. Connect a standard AC power cord to the AC input power connector on the PSM shown in [Figure 2-4](#), then plug the AC power cord into the main AC power outlet.
3. The green Power LED on the front of the PSM will illuminate to indicate a successful connection. If the LED remains off, proceed as follows:
 - a. Check the AC power cord connection at the AC power source and make sure the power source is within specification.
 - b. Check the AC power connection to the PSM.
 - c. Swap the AC power cord with a known good one.
 - d. If the green LED continues to remain off, contact Enterasys Networks. Refer to [“Getting Help”](#) on page 1-5 for instructions. Otherwise, proceed to step 4.
4. If installing two PSM power supplies, repeat steps 1 through 3 for the second PSM.

Figure 2-3 C2RPS-PSM Cable

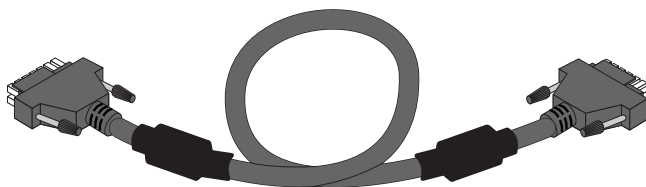
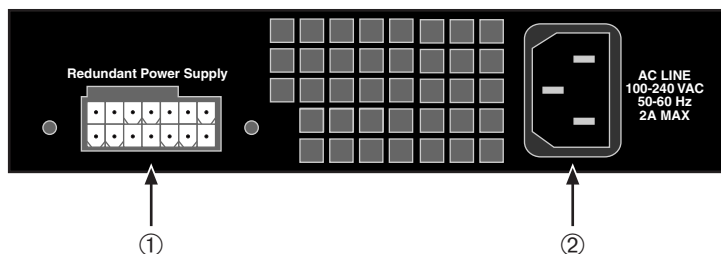


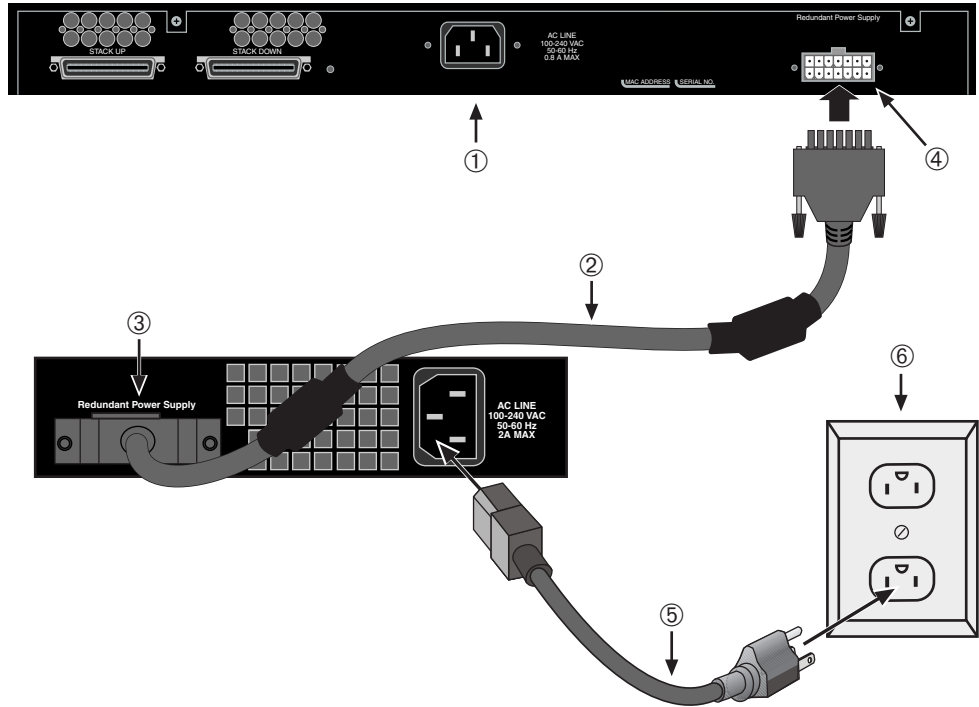
Figure 2-4 Power Connectors on C2RPS-PSM (rear view)



1 Redundant Power Supply connector

2 AC power connector (rear of chassis)

Figure 2-5 C2RPS-PSM Cable and AC Power Cord Connections



- | | |
|--|---|
| <ul style="list-style-type: none"> 1 Switch device 2 PSM cable 3 PSM Redundant Power Supply connector | <ul style="list-style-type: none"> 4 Switch device Redundant Power Supply connector 5 AC power cord (type varies depending on country) 6 AC power outlet with ground connection (type varies depending on country) |
|--|---|

- 5. On certain switches, an LED indicator will show that a redundant power supply is now in operation.



Note: No change in switch device configuration is necessary for this installation.

This completes the installation.



Specifications

This appendix includes specifications for the C2RPS-CHAS2, C2RPS-PSM, 12-Vdc power supply output connector, and provides the Compliance Standards.

For information about...	Refer to page...
C2RPS-CHAS2 Chassis Specifications	A-1
C2RPS-PSM Specifications	A-2
C2RPS-PSM Redundant Power Supply Output Connector	A-2
Compliance Standards	A-3

Enterasys Networks reserves the right to change the specifications at any time without notice.

C2RPS-CHAS2 Chassis Specifications

[Table A-1](#) provides the physical specifications for the C2RPS-CHAS2.

Table A-1 C2RPS-CHAS2 Specifications

Item	Specification
Power supply slots	Two slots for optional C2RPS-PSMs
Dimensions without mounting brackets	5.5 H x 48.2 W x 18.0D (cm) 2.2 H x 19.0 W x 7.0 D (in.)
Net Weight (Unit Only)	0.95 kg (2.09 lb)
Gross Weight (Packaged Unit)	1.60 kg (3.52 lb)

C2RPS-PSM Specifications

Refer to [Table A-2](#) for the input/output port specifications.

Table A-2 C2RPS-PSM Specifications

Item	Specification
Electrical	
AC Input Frequency Range	47–63 Hz
AC Input Voltage Range	85–264 Vac
Output Voltage	12 Vdc
Output Current	1.0 A min., 8.5 A or 13.0 A max.
Maximum Output Power	102 W or 156 W continuous
Physical	
Dimensions	19.6 H x 5.2 W x 25.7 D (cm)
	7.7 H x 2.04 W x 10.1 D (in.)
Net Weight (Unit Only)	1.75 kg (3.85 lb)
Gross Weight (Packaged Unit)	3.20 kg (7.04 lb)
MTBF	300,000 Hours

C2RPS-PSM Redundant Power Supply Output Connector

For pin location and function, refer to [Figure A-1](#) and [Table A-3](#), respectively.



Note: The following information is for troubleshooting purposes only. For proper operation, do not use any other cable except the C2RPS-PSM Cable. This cable is specially designed for this application and meets all necessary regulatory and safety standards. The use of non-approved cables will void your warranty.

Figure A-1 C2RPS-PSM Redundant Power Supply Connector Pin Locations

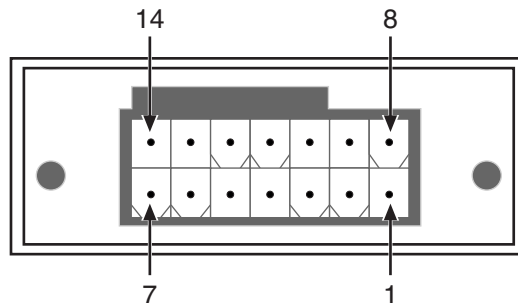


Table A-3 C2RPS-PSM Redundant Power Supply Connector Pin Functions

Pin Number	Function
1	Ground
2	No connection
3	12 Vdc Output
4	12 Vdc Output
5	12 Vdc Output
6	12 Vdc Output
7	Ground
8	Ground
9	No connection
10	No connection
11	Status 1
12	Status 2
13	Power good
14	Ground

Compliance Standards

The C2RPS-PSM meets the safety and electromagnetic compatibility (EMC) requirements listed in [Table A-4](#):

Table A-4 Compliance Standards

Item	Standard
Safety	UL 60950, CSA C22.2 No. 60950, 73/23/EEC, EN 60950, and IEC 60950
Electromagnetic Compatibility (EMC) (Applies to RPS system with two modules installed and working with two network devices.)	47 CFR Parts 2 and 15, CSA C108.8, 89/336/EEC, EN 55022, EN 61000-3-2, EN 61000-3-3, EN 55024; AS/NZS CISPR 22, and VCCI V-3

